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FEDERAL - STATE COOPERATIVE

SNOW SURVEYS AND IRRIGATION WATER FORECASTS

for

Montana and Northern Wyoming

Upper Missouri, Upper Columbia and Yellowstone Rivers

By
Division of Irrigation, Soil Conservation Service
United States Department of Agriculture
and
Montana Agricultural Experiment Station

In cooperation with the U. S. Forest Service, U. S. Geological Survey, National Park Service, U. S. Bureau of Reclamation, State Engineers of Montana and Wyoming and other Federal, State and local organizations.

As of

MAY 1, 1953

UNITED STATES DEPARTMENT OF AGRICULTURE
SOIL CONSERVATION SERVICE

TO RECIPIENTS OF COOPERATIVE SNOW SURVEY
AND WATER SUPPLY FORECAST REPORTS:

Forecasts by U. S. Weather Bureau of total annual streamflow October-September, inclusive, at more than 300 gaging stations are issued monthly January through May in the publication WATER SUPPLY FORECASTS FOR THE WESTERN UNITED STATES.

Weather Bureau forecasts of runoff presented in this bulletin are computed from procedures based on mathematical analysis of the relation between precipitation and runoff.

The Weather Bureau bulletins may be secured by writing to:

Hydrologist in Charge
River Forecast Center
U. S. Weather Bureau
712 Federal Office Building
Kansas City 6, Missouri

FEDERAL—STATE COOPERATIVE SNOW SURVEYS

AND

IRRIGATION WATER FORECASTS

FOR

MONTANA AND NORTHERN WYOMING

Upper Missouri and Upper Columbia River Basins

Report Prepared
by

Ashton R. Codd: Hydraulic Engineer
Soil Conservation Service

and

O. W. Monson: Irrigation Engineer
Montana Agricultural Experiment Station

Division of Irrigation
Soil Conservation Service

and

Montana Agricultural Experiment Station
Bozeman, Montana

IRRIGATION WATER SUPPLY OUTLOOK
FOR SEASON 1953
AS OF MAY 1, 1953

Snow survey measurements made on or about May 1st over the Upper Missouri Basin indicate that the water supply for the irrigation season for 1953 is FAIR to GOOD. The snow pack at this time is rather large when compared to an average consisting of 20 years' record.

Due to the dry fall and mild winter temperatures, a considerable portion of the snow pack is disappearing into the sub-soil. A good portion of the low elevation snow has disappeared, leaving a rather small area of the water shed covered with a relatively deep snow pack. Those irrigation projects under regulated reservoirs will have a good supply this season, while those under unregulated streams will need supplemental water for late July and August irrigation.

The snow pack over the Upper Columbia Basin in Montana has increased considerably during April, and some of the courses have more water content on May 1st than was evident during the last of March. Valley precipitation stations indicated a definite plus departure from normal over most of this basin which necessitated raising the forecast of seasonal volume flow. Reservoir storage is approximately average for this time of year. Antecedent stream flow has been close to median in general, with a few points showing a definite below-median trend.

JEFFERSON RIVER: Only a few snow survey courses are measured in the Jefferson River Basin on May 1st which indicates a rather normal situation in that basin. The forecast for this basin was not raised over the April figures.

MADISON RIVER: On the Madison River, the May 1st snow surveys showed a little better than average conditions for May 1st. The snow line is remarkably high, and the area to contribute to runoff will be relatively smaller than last season, even though we have a large water content in the higher elevations.

GALLATIN RIVER: Snow survey measurements made on May 1st indicate relatively the same trend as those on the Madison. The river forecasts for these two streams were raised slightly over the April 1st figure.

MISSOURI RIVER MAIN STEM: The Missouri River main stem below Three Forks will carry a good supply of water during the coming season. The water content on the snow survey courses above Helena and at Marias Pass indicate a good water content, although a very high snow line. Stream flow forecasts at Toston and Fort Benton have been raised slightly due to a plus departure in precipitation over this basin.

UPPER YELLOWSTONE RIVER: The snow pack in Yellowstone Park on May 1st is good for this time of year, although not as high in percentage of average as snow survey courses further west in the Missouri Basin. The stream flow at Corwin Springs for April-September was raised approximately 300,000 acre feet. It is now anticipated that approximately 2,000,000 acre feet will pass that station between April 1st and September 30th.

LOWER YELLOWSTONE RIVER (In Wyoming): The snow pack on the Popo Agie River on April 1st was slightly below average, and it is anticipated that there will be an early runoff of rather a small volume. The forecasts for the Popo Agie are approximately the same as April 1st, due to a plus departure from normal of precipitation over most of the basin. It is anticipated that above normal precipitation during May and June will produce about normal runoff conditions.

WIND RIVER: May 1st snow surveys made on the Wind River Basin above Dubois indicate a fair water supply during April-September from this stream. Revised forecasts would indicate approximately 110% of average flow at Riverton.

COLUMBIA RIVER BASIN: The 1953 snow pack as measured on May 1st in the Flathead Basin has increased at some stations, while the snow line has raised in elevation. The basin now contains a good water supply, and with normal May and June temperatures and precipitation, should yield approximately 6,189,000 acre feet of water from April 1st through September, or 110% of average. Although the snow line on the South Fork of the Flathead is relatively high, it is anticipated that 2,295,000 acre feet of water will be available to Hungry Horse Dam between April 1st and September 30th, or 110% average.

The Clark's Fork drainage received an above average precipitation during April, and the river forecasts were raised slightly to meet this condition. It is now anticipated that the Clark's Fork below Missoula will flow approximately 110% of average, and the combined rivers at Plains will flow approximately 113% of average during the April-September period.

May 1, 1953

FORECAST OF SEASONAL STREAM FLOW

UPPER MISSOURI RIVER IN MONTANA	Seasonal Stream Flow in Thousands of acre feet				
	FORECAST-1953 April - Sept.	% A-S 10-Yr. Avg.	Measured runoff April - Sept. 1952	Measured runoff April - Sept. 1951	10-Yr. Avg.A-S '41-'50
RED ROCK RIVER					
Kenedy Ranch (at)	74.4	120	-	-	62
Monida (near) (1)	95.9	112	-	-	86
BEAVERHEAD RIVER					
Barratts, Montana	193	97	222	170	198
BIGHOLE RIVER					
Melrose (near)	789	101	-	861	781
JEFFERSON RIVER					
Sappington (at)	984	86	-	1,144	1,134
MADISON RIVER					
West Yellowstone (near)	195	98	248	234	199
Garyling (near) (2)	412	98	-	-	419
McAllister (near) (3)	763	104	-	-	733
GALLATIN RIVER					
Gateway (near)	435	96	596	399	454
Hyalite Creek	33.6	92	41.0	27.7	36.7
Logan (at)	455	93	745	412	491
MISSOURI RIVER					
Tos ton (at)	2,208	90	2,825	2,217	2,450
Fort Benton (at)	3,298	94	-	4,072	3,524
Loma	3,810	91	-	5,162	4,201
Zortman	4,090	90	-	5,524	4,564
SUN RIVER					
Vaughn (at) (5)	366	91	-	-	401
MARIAS RIVER					
Shelby (at)	444	81	-	-	545
Brinkman (near)	445	81	-	-	549
JUDITH RIVER					
Utica (near)	34	77	48	40	44
YELLOWSTONE RIVER					
Corwin Springs (at)	2,000	108	2,184	2,254	1,858
Livingston (near)	2,319	107	-	2,474	2,166
Billings (at)	3,965	95	4,642	4,469	4,167
Miles City (at)	6,617	97	6,264	7,237	6,774
Sidney (near)	6,941	97	-	7,063	7,086
SHIELDS RIVER					
Wilsall (near)	43.2	98		32.2	44
CLARK FORK RIVER					
Chance (at)	520	88		731	589
Edgar (at)	556	88	613	766	630

(1) Observed flow plus change in stor age in Lima Reservoir
(2) Observe d flow plus change in storage in Hebgen Lake
(3) Observed flow plus change in storage in Hebgen and Ennis Lakes
(5) Observed flow plus change in storage in Gibson, Willow Creek & Pishkun Res.
(*) Preliminary data furnished by U.S. Geological Survey, subject to revision.

May 1, 1953

FORECAST OF SEASONAL STREAM FLOW

YELLOWSTONE RIVER TRIBUTARIES IN WYOMING	Seasonal Stream Flow in Thousands of acre feet				
	FORECAST-1953 April - Sept.	% A-S 10-Yr. Avg.	Measured runoff April - Sept. 1952	Measured runoff April - Sept. 1951	10-Yr. Avg.A-S '41-'50
WIND RIVER					
Riverton (at) (6)	640	110	-	-	534
BIG HORN RIVER					
Thermopolis, (at) (7)	960	95	-	-	1,011
Kane, (at)	1,394	94	-	1,514	1,475
St. Xavier (near) (8)	2,192	98	-	2,365	2,232
BULL LAKE CREEK					
Bull Lake (Above)	171	85		-	202
Lenor (near) (9)	159	83		-	192
POPO AGIE RIVER					
Riverton (near)	369	98		-	375
NORTH FORK POPO AGIE RIVER					
Lander (near)	72	96		87	75
LITTLE POPO AGIE RIVER					
Hudson (at)	57	100	-	-	57
GREYBULL RIVER					
Meeteetse (at)	208	87		-	238
Basin (near)	99	85		-	122
SHOSHONE RIVER					
Buffalo Bill Dam (below) (10)	811	103		862	785
Byron (at) (10)	674	112		691	601
TONGUE RIVER					
Dayton (near)	111	97		108	114
Acme (near)	265	106		206	250
Decker (near) Montana (11)	271	98		210	276
POWDER RIVER					
Arvado (at)	163	98		59	165
Moorehead (at)Montana	298	95		117	313
Locate (at) Montana	366	94		150	390
MIDDLE FORK POWDER RIVER					
Kaycee (near)	73	90		50.3	81
NORTH FORK POWDER RIVER					
Mayoworth (near)	18.8	94		12	20
CLEAR CREEK					
Buffalo (near)	38.9	97		26	40
Arvado (near)	119	90		53.4	132

(6) Observed flow plus Storage in Bull Lake and Pilot Butte Reservoirs
(7) Observed flow plus Storage in Boysen Reservoir
(8) Observed flow plus Storage in Boysen and Buffalo Bill Reservoirs
(9) Observed flow plus Storage in Bull Lake Reservoir
(10) Observed flow plus Storage in Buffalo Bill Reservoir
(11) Observed flow plus Storage in Tongue Reservoir
(*) Preliminary data furnished by U.S. Geological Survey subject to revision.

May 1, 1953

FORECAST OF SEASONAL STREAM FLOW

UPPER COLUMBIA RIVER IN MONTANA	Seasonal Streamflow in Thousands of acre feet					
	FORECAST 1953		% A-S	Measured runoff		10-Yr.
	April-Sept.	April-July	10-Yr. Avg.	April - Sept.* 1952	1951	Avg.A-S '41-'50
CLARK FORK RIVER						
Bonner (above) (3)	896	810	115	-	941	781
Missoula (above)	1780	1619	109	1782	2369	1631
Missoula (below)	3363	3087	110	3268	4127	3044
St. Regis (at)	4486	4146	111	4318	5492	4042
Plains (near) (4)	12314	11341	113	9421	13302	10869
Cabinet Gorge (at) (4)	13822	12734	113	-	15178	12297
BLACKFOOT RIVER						
Bonner (near)	884	806	104	-	1295	851
BITTERROOT RIVER						
Darby (near)	609	571	110	608	663	544
At Mouth (6)	1583	-	112	1362	1618	1413
FLATHEAD RIVER						
Columbia Falls (near) No. Fk.	1754	1606	103	-	2396	1705
Columbia Falls (at) (7)	6189	5583	110	7224	5722	5604
Polson (near) (4)	7441	6843	112	4993	6363	6621
MIDDLEFORK FLATHEAD RIVER						
West Glacier (near)	1813	1697	108	-	2138	1664
SOUTH FORK FLATHEAD RIVER						
Columbia Falls (near)(7)	2295	2150	110	2058	2511	2091

(3) Difference in observed flow, Clark Fork above Missoula and Blackfoot at Bonner.
(4) Observed flow plus change in storage in Flathead Lake and Hungry Horse Res.
(6) Difference in observed flow, Clark Fork above and below Missoula.
(7) Observed flow plus change in storage in Hungry Horse Reservoir.
(*) Preliminary data furnished by U.S. Geological Survey, subject to correction.

U. S. DEPARTMENT OF AGRICULTURE
SOIL CONSERVATION SERVICE

MONTANA AND NORTHERN WYOMING SNOW SURVEY COURSES

LEGEND
- TOWNS AND CITIES
- 13D4 SNOW SURVEY COURSE
- (14) IDAHO & WYOMING NUMBERS
- STREAM GAGING STATIONS

JANUARY 1953
REVISED
DIVISION OF IRRIGATION BOZEMAN MONTANA

SCALE IN MILES 50 25 0 50 100

REPRODUCED BY THE SOIL CONSERVATION SERVICE, CARTOGRAPHIC DIVISION, LINCOLN NEBR SP-1464

INDEX TO MONTANA & NORTHERN WYOMING SNOW COURSES

Drainage Basin and Course Name	Montana Number	Elev.	Location Sec. Lat.	Twp.	Range Long.	Record Began	Measuring Dates[a]	Measured By:[b]
MISSOURI RIVER DRAINAGE								
JEFFERSON RIVER								
(ROCK-BEAVERHEAD)								
Lakeview Ridge	11B3	7400	27	14S	2W	1948	3,4,5	9
Lakeview Canyon	11B4	6930	26	14S	2W	1948	3,4,5	9
Limekiln	12E2	6950	5	15S	9W	1948	3,4	1
White Pine Ridge	12E1	8850	18	14S	9W	1948	3,4	1
(HORSE PRAIRIE)								
Bloody Dick	13010	7600	12	8S	16W	1948	3,4	1
Cold Stone	13D9	8100	11	8S	16W	1948	3,4	1
Lemhi Pass	13E1	7480	9	10S	15W	1948	3,4	1
Terrell Creek	13D12	6650	14	9S	15W	1948	3,4	1
Trail Creek	13E2	7090	15	10S	15W	1948	3,4	1
Selway Junction	13D11	6800	27	8S	15W	1948	3,4	1
(BIG HOLE)								
Big Hole Pass	1303	7440	28	3S	18W	1948	3,4	1
Big Hole Pass (Below)	1304	6900	24	3S	18W	1948	3,4	1
East Boundary	1305	6700	22	3S	17W	1948	3,4	1
Gibbons Pass	13D2	7100	4	2S	19W	1934	1,2,3,4,5	1,2
Jahnke Creek	13D6	7340	25	7S	16W	1948	3,4	1
Miner Forks	13D6	7300	24	6S	17W	1948	3,4	1
Miner Lake	1307	6720	10	6S	16W	1945	3,4,5	1
(WISE RIVER)								
Anderson Mdw.	13B14	7000	18	3S	12W	1948	3,4	1
Elk Horn	13013	8450	15	4S	12W	1934	3,4,5	2
Wise River	13D13	6300	15	2S	12W	1948	3,4	1
(RUBY RIVER)								
Cottonwood	11E2	5900	24	10S	3W	1948	3,4	1
Cottonwood (Upper)	11E1	8400	30	10S	2W	1948	3,4	1
Flashlight	12D3	6950	22	8S	7W	1945	3,4,5	1
Tobacco Root	12D2	6900	13	4S	4W	1948	3,4	1
Vigilante	11D1	6125	28	9S	3W	1948	3,4	1
MADISON RIVER								
Hebgen	11E5	6550	22	11S	3E	1934	1,2,3,4,5	2
West Yellowstone	11E7	6700	34	13S	5E	1934	1,2,3,4,5	2
Norris Basin	10E2	7500	44°-44'		110°-42'	1935	3,4	5,6
GALLATIN RIVER								
Cevil'e Slide	1004	8100	14	5S	6E	1935	2,3,4,5	2,6
Hood Meadow	10D3	6600	22	4S	6E	1934	2,3,4,5	2,6
Mystic Lake	10D2	6600	30	3S	7E	1935	2,3,4	6,7
New World	1001	6700	24	3S	6E	1939	1,2,3,4,5	6,7
21-Mile	11E6	7150	1	11S	5E	1934	1,2,3,4,5	2
MISSOURI RIVER MAIN STEM								
Chessman Reservoir	12C5	6200	2	8N	5W	1936	1,2,3,4,5	2
Crystal Lake	9C1	6100	24	12N	17E	1941	3,4	1
Grasshopper	1002	7000	19	9N	8E	1938	3,4	1
Kings Hill	1001	7950	35	13N	7E	1937	3,4,5	2
Picnic Grounds	12C6	6500	22	5N	6W	1940	2,3,4	3
Pipestone Pass	1201	7200	11	1N	7W	1938	2,3,4,5	1
Stemple Pass	12C1	6900	16	13N	7W	1934	3,4,5	2
Ten Mile Creek, Lower	12C2	6250	13	8N	6W	1935	1,2,3,4,5	2
Ten Mile Creek, Middle	12C3	6800	13	8N	6W	1934	1,2,3,4,5	2
Ten Mile Creek, Upper	12C4	8000	19	8N	5W	1935	1,2,3,4,5	2
(TETON RIVER)								
Freight Creek	12A1	6000	13	26N	10W	1948	3,4	1
Waldron Creek	12B2	5600	16	25N	9W	1948	3,4	1
West Fork	12B1	6000	6	25N	9W	1948	3,4	1
(SUN RIVER)								
Bench Mark	12B8	5500	9	20N	10W	1948	3,4	1
Cabin Creek	12B6	5400	33	23N	10W	1949	3,4	1
5-Bull	1289	5600	36	20N	10W	1948	3,4	1
Gates Park	12B5	5300	31	24N	10W	1949	3,4	1
Goat Mountain	12B7	7000	20	22N	10W	1934	3,4	2
My Lake	13B9	7300	21	23N	12W	1950	3,4	1
Wrong Creek Ridge	12B3	6800	17	25N	10W	1949	3,4	1
Wrong Creek	12B4	5700	32	25N	10W	1949	3,4	1
(MARIAS RIVER)								
Marias Pass	13A5	5250	34	30N	14W	1936	1,2,3,4,5	2
(MILK RIVER)								
Rocky Boy	9A1	5200	15	28N	16E	1941	3,4	7
(MISSELSHELL RIVER)								
Grasshopper	10C3	7000	19	9N	8E	1938	3,4	1
(UPPER YELLOWSTONE)								
Camp Senia	901	7890	2	8S	18E	1937	4	1
Canyon	10E3	7750	44°-44'		110°-30'	1938	1,2,3,4,5	12
Cooke City	10D7	7400	25	9S	14E	1937	1,2,3,4,5	5
Crevice Mt.	1005	8400	29	9S	9E	1935	3,4	1
Independance	1006	8000	22	7S	12E	1941	3,4	12
Lake Camp	10E4	7850	44°-34'		110°-24'	1937	1,2,3,4,5	12
Lupine Creek	10E1	7300	44°-54'		110°-37'	1938	1,2,3,4,5	5
(SHIELDS RIVER)								
Porcupine	10C3	6500	10	4N	10E	1938	3,4	1
LOWER YELLOWSTONE								
(Wind River) Wyoming								
Brooks Lake #3	10F2	9200	23	44N	110W	1939	2,3,4,5	12
Burroughs Creek	9F6	8800	15	43N	107W	1948	2,3,4,5	12
Dinwoodie	9F10	10000	9	39N	105W	1948	2,3,4,5	12
Dry Creek	9F9	9500	34	4N	6W	1948	2,3,4,5	12
DuNoir	9F2	8750	27	42N	108W	1940	2,3,4,5	12
Geyser Creek	9F3	8500	12	41N	108W	1948	2,3,4,5	12
Nobbe Park	9G2	10000	22	2S	3W	1948	2,3,4,5	12
Little Warm	9F4	9500	24	41N	108W	1948	2,3,4,5	12
Mosquito Park R.S.	9G3	9500	23	2S	3W	1940	2,3,4,5	12
Sheridan R.S.	9F1	7500	3	42N	109W	1939	2,3,4,5	12
St. Lawrence R.S.	9F11	9000	26	1N	4W	1940	2,3,4,5	12
T-Cross Ranch	9F5	8000	1	43N	107W	1940	2,3,4,5	12
Trout Creek	9G1	8400	5	2S	2W	1948	2,3,4,5	12
Togwotee Pass	10F1	9600	29	44N	110W	1936	2,3,4,5	10
(Popo Agie River) Wyoming								
Blue Ridge	8G2	9500	23	31N	101W	1939	2,3,4,5	12
Granier Meadows	8G4	9000	19	30N	100W	1936	2,3,4,5	12
Larsen Creek	9G4	9000	12	30N	103W	1948	3,4,5	12
Sawmill Glade	8G1	8500	3	31N	101W	1939	2,3,4,5	12
South Pass	8G3	9000	13	30N	101W	1939	2,3,4,5	12

Drainage Basin and Course Name	Montana Number	Elev.	Location Sec. Lat.	Twp.	Range Long.	Record Began	Measuring Dates[a]	Measured By:[b]
MISSOURI RIVER DRAINAGE CONT.								
BIG HORN RIVER Wyoming								
Beavers Mill	9F8	8900	6	43N	102W	1948	2,3,4,5	12
Owl Creek	8F1	8700	36	43N	101W	1948	2,3,4,5	12
Tensleep R.S.	7E3	8300	30	49N	86W	1935	4,5	1
Timber Creek	9E2	8800	25	47N	103W	1948	4,5	12
Ranger Creek	7E1	8800	32	53N	88W	1935	4,5	1
Wood River	9F7	8000	28	46N	103W	1939	2,3,4,5	12
(SHOSHONE RIVER) Wyoming								
East Entrance	10E6	7000	17	52N	109W	1948	1,2,3,4,5	5
Sylvan Pass	10E5	7100	12	52N	110W	1936	1,2,3,4,5	5
TONGUE RIVER Wyoming								
Big Goose	7E2	7700	4	53N	86W	1945	2,3,4,5	1
Burgess Ranger Sta.	7E4	7900	36	56N	89W	1950	2,3,4,5	12
Dome Lake	7E5	8800	11	53N	87W	1950	2,3,4,5	12
Lodgepole	9E1	8200	32	56N	106W	1940	4,5	1
POWDER RIVER								
North Powder	7E8	8500	5	47N	85W	1951	2,3,4,5	12
Muddy Pass	7E7	9700	11	48N	85W	1950	2,3,4,5	1
Soldier Park	7E6	8700	36	51N	85W	1950	2,3,4,5	12
Sour Dough	6E1	8500	17	49N	84W	1936	2,3,4,5	1
Red Fork	7E1	7000	18	43N	85W	1936	2,3,4,5	12
COLUMBIA RIVER BASIN								
KOOTENAI RIVER								
Bares Mountain	15B1	6000	1	25N	31W	1937	4,5	1
Blue Bird Basin	14A1	6800	24	37N	26W	1937	4,5	1
Red Mountain	15A1	6000	4	36N	29W	1937	3,4,5	1
FLATHEAD RIVER								
Basin Creek	13B14	5000	11	19N	12W	1951	2,3,4,5	1
Big Creek	1383	6750	647	22N	18W	1941	3,4,5	4
Brush Creek	14A4	5000	13	30N	26W	1937	3,4,5	1
Cattle Queen	13A1	4700	7	35N	17W	1939	3,4,5	5
Desert Mountain	13A2	5600	24	31N	19W	1937	1,2,3,4,5	1
HellRoaring Divide	14A3	5770	35	32N	22W	1942	3,4,5	1
Holbrook	13B13	4530	18	21N	13W	1951	1,2,3,4,5	1
Kishenehn	14A2	4300	7	37N	21W	1946	4,5	5
Limestone Pass	13B8	7000	28	18N	12W	1948	3,4,5	1
Logan Creek	14A5	4300	34	30N	24W	1937	3,4,5	1
Marias Pass	13A5	5250	34	30N	14W	1934	1,2,3,4,5	2
Snow Lab. #16	13A9	5200	15	29N	14W	1946	1,2,3,4,5	2
Spotted Bear Mt.	13B2	7000	23	25N	15W	1948	3,4,5	1
Strawberry Lake	13A10	6500	11	28N	19W	1948	3,4,5	1
Trinkus Lake	13B1	6500	9	25N	17W	1948	3,4,5	1
Trout Lake #2	13A12	3600	21	28N	17W	1948	3,4,5	1
Upper Holland Lake	1385	7000	28	20N	16W	1948	3,4,5	1
Twin Creeks	13B11	3580	14	26N	16W	1951	2,3,4,5	1
Quintonkon	15A13	3800	11	26N	17W	1951	2,3,4,5	1
Coyote Hill	13B10	4200	12	18N	16W	1951	1,2,3,4,5	1
El Dorado Mine	1309	7800	23	8N	12W	1946	4	11
Gold Creek Lake	1308	7200	14	8N	12W	1946	4	11
Intergaard	13C4	6450	6	5N	13W	1939	2,3,4	3
Lubrecht Forest	1308	5400	31	11N	15W	1951	1,2,3,4,5	13
North Fork Jocko	13B7	6330	3	17N	17W	1941	3,4,5	4
Pionio Grounds	12C6	6500	22	5N	6W	1940	2,3,4	3
Pipestone Pass	12D1	7200	11	1N	7W	1938	2,3,4,5	1
Rainy Lake	13B6	4300	11	18N	16W	1947	3,4,5	1
Slide Rock Mountain	13C2	7100	20	10N	16W	1937	4	1
Southern Cross	13C5	6500	9	5N	13W	1939	2,3,4	3
Stemple Pass	13C1	6900	16	13N	7W	1934	3,4,5	2
Storm Lake No. 2	13C7	7780	19	4N	13W	1939	2,3,4	1
Stuart Mill	13C6	6500	19	5N	13W	1939	2,3,4	3
Stuart Mountain #1	13C1	7400	6	11N	18W	1936	4	1
POND OREILLE RIVER								
Baree Mountain	1381	6000	1	25N	31W	1937	4,5	1
Freezeout Submit #2	15B10	6800	21	15N	27W	1951	4	1
Hoodoo Creek	15C1	6200	9&16	11N	27W	1937	4	1
BITTERROOT RIVER								
East Fork Ranger Stn.	13D1	5400	10	2N	17W	1937	4	1
Gibbons Pass	13D2	7100	4	2S	19W	1934	1,2,3,4,5	1
Mud Creek Pasture	14C1	4500	24	11N	21W	1937	3	1
Nez Perce Camp	14D2	5580	19&20	1S	23W	1937	4	1
Nezperce Pass	14D1	6575	32	28N	16E	1937	4	1
Skalkaho Summit	13C3	7259	30	6N	17W	1937	4	1
SASKATCHEWAN RIVER BASIN								
ST. MARY RIVER								
Iceberg Lake	13A3	6000	48°-50'		113°-12'	1922	5	2,8
Piegan Pass #4	13A4	5000	48°-46'		113°-40'	1922	5	2,8
Piegan Pass #6	13A6	6500	48°-45'		113°-12'	1922	5	2,8
Mount Allan #7	13A7	7000	48°-44'		113°-10'	1922	5	2,8
Ptarmigan #8	13A8	5800	48°-50'		113°-12'	1922	5	2,8

a. Numerals 1,2,3,4, and 5 refer to January 1, February 1, March 1, April 1, and May 1

b. Numerals refer to Agency that secures the snow survey as follows:

1. U.S. Forest Service
2. U.S. Geological Survey and U.S. Engineer Corps
3. Montana Power Company
4. U.S. Indian Service
5. National Park Service
6. Montana Experiment Station
7. City of Sorcmen
8. Dominion Water and Power Bureau
9. U.S. Fish and Wildlife Service
10. U.S. Bureau of Reclamation
11. Deerlodge Citizens Committee
12. Soil Conservation Service
13. Montana State Forestry School

5,R-11,4&L-4

STORAGE IN RESERVOIRS OF MONTANA - May 1, 1953
MISSOURI RIVER BASIN - MONTANA

RESERVOIR	Location on or diversion from	Usable Capacity	Reservoir Volumes in 1,000's a.f.				
			1953	1952	1951	1950	10-yr. average 1943 - 1952
Lima Reservoir	Beaverhead	84.00		62.45	72.02	69.54	67.03
Ruby Reservoir	Ruby River	38.85					
Willow Creek Reser.	Willow Creek	17.76					
Hebgen Lake	Madison River	345.00	203.3	205.2	261.3	231.4	220.5
Ennis Lake	Madison River	41.00	33.39	38.35	29.89	32.78	35.03
Middle Creek Reser.	Hyalite Creek		5.48				
Lake Sewall	Missouri River		80.52	26.42	20.47	12.24	26.19
Hauser Lake	Missouri River	62.50	51.87	34.64	52.93	36.73	43.13
Lake Helena	Missouri River	10.45	6.86	2.24	7.20	2.70	6.81
Holter Lake	Missouri River	81.92	36.61	57.80	56.51	68.03	57.78
Gibson Reservoir	N.Fk. Sun River	105.00	73.89	92.57	81.71	52.51	73.22
Willow Creek Res.	N.Fk. Sun River	32.30	28.18	26.82	27.09	5.89	18.28
Pishkun Reservoir	N.Fk. Sun River	32.00	19.94	23.48	19.04	24.66	20.46
Bynum Reservoir	Teton River						
Lower Two Medicine Lake	Two Medicine River	14.00		0	0	0	2.10
Four Horns Lake	Badger Creek	20.00		7.66	8.58	6.36	8.08
Swift Reservoir	Birch Creek	30.00	21.98	30.19	30.20	24.89	28.01
Lake Francis	Dupuyer & Birch Cr.	112.00	101.40	98.80	102.20	91.42	102.20
Ackley Lake	Judith River	5.82		4.87	4.81	4.36	4.80
Durand Reservoir	N.Fk.Musselshell	7.01	5.17		7.03	7.03	
Martinsdale Reservoir	S.Fk.Musselshell	23.10	12.68		14.23	13.73	
Deadman Basin "	Musselshell River	52.50				52.00	
Fort Peck Reservoir	Missouri River	19,000.00	12,630.0	13,630.0	13,400.0	12,540.0	12,512.0
Fresno Reservoir	Milk River	127.20	97.49	148.50	132.50	60.94	96.98
Nelson Reservoir	Milk River	66.80	36.66	40.28	18.49	13.40	31.84
Mystic Lake	W.Rosebud Creek	20.80	4.84	2.87	1.21	0.579	3.34
Cooney Reservoir	Red Lodge Creek	27.50		18.34	16.51	18.98	13.71
Tongue River Reser.	Tongue River	73.90	22.14	30.11	14.98	15.10	17.31
Sherburne Lake	Swiftcurrent Cr.	66.10			39.94	34.08	
	YELLOWSTONE RIVER BASIN - Wyoming						
Buffalo Bill Reservoir	Shoshone River	456.60		233.7	236.2	164.3	278.6
Boysen Reservoir	Wind River	819.80		233.4			
Pilot Butte Reservoir	Wind River	30.10		19.1	21.0	19.9	205.6
Bull Lake Reservoir	Wind River (Bull Creek)	155.00		33.9	71.5	6.8	51.6

STORAGE IN RESERVOIRS OF MONTANA - May 1, 1953

COLUMBIA RIVER BASIN

RESERVOIR	Location on or diversion from	Usable Capacity	Reservoir Volumes in 1,000's a.f.				
			1953	1952	1951	1950	10-yr. average 1943 - 1952
Georgetown Lake	Flint Creek	31.00	23.80	21.58	21.41	19.04	21.68
E.Fk. Creek Res.	E.Fk.Rock Creek	16.04					
Nevada Creek Res.	Nevada Creek	12.60					
W.Fk.Bitterroot Res.	W.Fk. Bitterroot	31.70					
Como Lake	Rock Creek	34.80			20.50	19.00	
Hungry Horse Res.	So.Fk.Flathead Riv.	3,500.00	898.4	216.7			
Flathead Lake	Flathead River	1,791.00	777.9	1212.0	990.6	829.3	991.9
Little Bitterroot	Little Bitterroot*	36.10	31.64	36.12	32.56	36.12	21.77
Dry Fork Reservoir	Dry Fork Creek*	6.70	5.58	6.41	5.82	6.02	48.00
Mission Valley Res.	Flathead Irr.Proj.**	98.60	43.44	67.17	58.84	32.66	48.94
Lower Jocko Lake	Jocko Creek	7.6	0.245	2.58			

* Sum of two reservoirs on Little Bitterroot
* Sum of two reservoirs on Dry Fork Creek
** Sum of (8) eight reservoirs on Project

PRECIPITATION DATA FOR APRIL 30, 1953
MONTANA

Station	Elevation	1952 Current Precipitation Oct.	Nov.	Dec.	1953 Jan.	Feb.	Mar.	Apr.	Dept. from Normal	Accumulated Precipitation 1952-53	Normal	Departure
WEST OF DIVIDE												
Fortine	3000	.05	.28	.87	2.96	.71	0.90	2.29	+1.30	8.06	8.99	- .93
Butte (Airport)	5533	.06	.75	.24	.73	1.03	0.45	1.36	+0.30	3.99	4.19	- .20
Phillipsburg	5280	T	1.07	.28	1.27	.94	0.56	0.91	-0.34	5.03	6.28	-1.25
Hamilton	3529	.11	.64	.27	1.60	.35	0.42	0.21	-0.66	3.60	5.53	-1.93
West Glacier	3154	.08	.86	2.43	7.07	3.24	1.62	3.19	+1.69	18.30	16.61	+1.69
Summit (Marias)	5213	.75	1.63	3.12	14.00	4.50	3.20	5.78	+3.50	32.98	19.82	+13.16
Ovando 1 SW	4101	.13	.65	1.16	3.02	1.40	0.24	0.62	-0.33	7.22	9.66	-2.44
Trout Creek	2485	.26	.37	3.42	13.14	3.29	1.37	2.76	+1.08	24.61	21.45	+3.16
Thompson Falls	2435	.13	.38	1.03	7.30	1.96	0.48	2.05	+0.61	13.33	13.01	+0.32
Average (9)		.17	.72	1.42	5.68	1.93	1.03	2.37	+1.03	13.01	12.50	+0.51
CENTRAL DIVISION												
Babb	4300	.14	.96	.08	2.24	1.53	1.52	3.56	+1.94	10.87	7.64	+3.23
Havre	2488	.01	.42	.12	.26	.58	0.45	1.53	+0.54	3.37	4.62	-1.25
Great Falls(Airport)	3664	.16	1.36	.08	.55	1.46	0.74	1.85	+0.70	6.20	5.38	+0.82
Helena (Airport)	3893	.35	1.05	.28	.51	1.02	0.22	0.83	-0.29	4.26	4.39	-0.13
Lewistown (Airport)	4132	.37	.65	.08	.44	.79	0.31	1.36	+0.09	4.00	4.57	-0.57
Livingston	4485	.18	.52	.18	.50	.77	0.56	1.83	+0.51	4.54	5.83	-1.29
Wisdom	6058	.13	.35	.43	1.46	1.19	0.54	1.63	+0.52	6.29	5.67	+0.72
West Yellowstone	6669	.13	.68	2.23	2.20	2.05	1.65	0.94	-0.90	9.86	14.56	-4.70
Mystic Lake	6558	.19	1.48	.47	1.60	2.04	1.34	4.28	+1.54	11.40	11.47	-0.07
Average (9)		.17	.83	.44	1.08	1.38	0.70	1.98	+0.52	6.75	7.12	-0.37
EASTERN DIVISION												
Malta	2255	.01	.18	.26	.50	.52	0.73	2.09	+1.29	4.29	3.78	+0.51
Ft. Peck	2180	T	.04	.11	.21	.67	0.28	1.54	+0.46	2.85	3.73	-0.88
Medicine Lake	1962	.11	.10	.08	.70	.07	0.14	1.73	+0.84	2.93	3.29	-0.36
Circle	2428	.03	.17	T	.11	.25	0.23	1.59	+0.45	3.61	5.59	-1.98
Billings #2	3139	.47	.32	.15	.36	.47	0.45	0.93	-0.37	3.17	5.74	-2.57
Miles City	2392	.01	.61	.11	.70	.48	0.68	2.52	+1.40	5.11	5.23	-0.12
Glendive	2076	.02	.58	.05	.17	.36	0.66	2.28	+1.16	4.12	4.71	-0.59
Broadus	3026	.04	T	.06	.85	.53	0.42	1.91	+0.38	3.81	5.29	-1.48
Average (8)		.08	.25	.10	.45	.42	0.49	1.82	+0.22	3.74	4.67	-0.93

PRECIPITATION DATA FOR April 30, 1953
NORTHERN WYOMING

Station	Elevation	1952 Current Precipitation Oct.	Nov.	Dec.	1953 Jan.	Feb.	Mar.	Apr.	Dept. from Normal	Accumulated Precipitation 1952-53	Normal	Departure
BIG HORN RIVER BASIN												
Cody	4984	.03	.21	.02	.14	.97	0.18	2.79	+1.76	4.34	3.72	+0.62
Lovell	3825	.00	.19	.11	.12	.18	0.30	0.54	-0.06	1.44	2.84	-1.40
Worland	4061	.00	.16	.08	.28	.40	0.40	1.53	+0.53	2.85	3.35	-0.50
Sunshine 4 SW	6930	.36	1.94	.18	.54	.52	0.45	2.37	-0.09	7.68	7.75	-0.07
Thermopolis	4336	.02	.30	.06	.80	.72	0.52	2.55	+0.53	4.97	5.88	-0.91
Riverton	4954	.16	.14	.06	.56	.42	0.23	1.89	+0.59	3.46	4.03	-0.57
Dubois	6917	.03	.39	.41	.42	.13	0.37	1.66	+0.61	3.41	4.06	-0.65
Average		.08	.47	.13	.26	.47	0.35	1.90	+0.40	4.22	4.67	-0.45
TONGUE RIVER BASIN												
Sheridan	4021	.22	.27	.50	1.14	1.53	0.77	1.53	-0.39	5.96	6.97	-1.01
POWDER RIVER BASIN												
Arvada	3680	.19	.19	.65	.69	.53	0.28	1.18	-0.08	3.71	4.62	-0.91
Metz Ranch	5280	.02	.04	.23	.40	.91	0.27	1.16	-0.43	3.03	5.05	-2.02
Gillette	4542	.18	.70	.86	.62	.94	T	2.40	+0.65	5.70	6.21	-0.51
Nine Mile Creek	5000	.10	.40	.27	1.13	.94	0.56	1.58	-0.18	4.98	4.98	0.00
Mid-West	4850	.10	1.02	.12	.74	2.78	0.23	2.01	+0.32	7.00	6.09	+0.91
Average		.12	.47	.43	.61	1.22	0.20	1.67	+0.07	4.88	5.39	-0.51

MONTANA SNOW SURVEYS May 1, 1953

MISSOURI BASIN

Drainage Basin & Snow Course *	No.	Elev.	Date of Survey 1953	Snow Depth (In.) 1953	Water Content (Inches) May 1 1953	Past Records 1952	1951	1950	1949	Average Data May 1 Avg.	% Avg.	Years
JEFFERSON RIVER												
(Rock-Beaverhead)												
Lakeview Ridge	11E3	7400	4/30	23	7.6	10.6	4.9	-	2.4	5.9	129	5
Lakeview Canyon	11E4	6930	4/30	34	11.7	17.9	8.2	-	2.2	9.4	124	5
(Wise River)												
Elk Horn	13D15	8450	5/1	31	10.2	3.8	-	10.7	5.5	5.5	186	11
MADISON RIVER												
Hebgen	11E5	6550	4/28	16	6.2	7.2	0	8.4	1.2	2.8	222	20
West Yellowstone	11E7	6700	4/28	14	5.8	6.8	5.1	10.0	4.4	3.7	157	20
21-Mile	11E6	7150	4/29	36	12.5	16.1	12.5	18.8	12.6	10.6	118	20
*Big Springs	11E9	6500										
GALLATIN RIVER												
Devil's Slide	10D4	8100	5/2	63	23.3	25.6	18.7	24.5	20.3	21.4	109	19
Hood Meadow	10D3	6600	5/2	16	5.2	2.5	5.5	8.5	1.7	4.2	124	19
21-Mile	11E6	7150	4/29	36	12.5	16.1	12.5	18.8	12.6	10.6	118	20

MONTANA SNOW SURVEYS May 1, 1953

MISSOURI BASIN

Drainage Basin & Snow Course *	No.	Elev.	Date of Survey 1953	Snow Depth (In.) 1953	Water Content (Inches) May 1 1953	Past Records 1952	1951	1950	1949	Average Data May 1 Avg.	%Avg.	Years
MISSOURI RIVER MAIN STEM												
Chessman Reservoir	12C5	6200	4/20	12	3.5	00	3.0	7.8	00	1.6	219	18
Kings Hill	10C1	7950	4/29	37	12.4	9.8	12.8	19.6	12.8	11.6	107	13
Pipestone Pass	12D1	7200	5/1	24	6.1	0.3	6.3	3.2	1.0	2.0	306	14
Stemple Pass	12C1	6900	4/30	31	8.8	4.2	11.2	14.2	6.3	5.9	149	19
Tenmile, Lower	12C2	6250	5/2	18	5.4	00	5.1	8.9	0.2	2.0	270	18
Tenmile, Middle	12C3	6800	5/2	35	11.8	1.7	11.2	16.3	3.5	6.3	187	19
Tenmile, Upper	12C4	8000	5/2	44	16.2	5.9	14.8	18.8	7.1	10.2	159	18
(Marias River)												
Marias Pass	12B5	5250	4/30	45	17.4	10.5	19.7	26.3	12.1	9.9	176	19
UPPER YELLOWSTONE												
Canyon	10E3	7750	5/1	37	13.9	13.3	17.3	9.7	10.8	11.6	120	7
Cooke City	10D7	7400	5/1	17	5.4	3.2	6.2	6.1	3.6	4.9	110	9
Lake Camp	10E4	7850	5/1	20	6.5	7.9	6.2	11.9	7.6	7.8	83	8
Lodgepole, Wyoming	9E1	8200	5/1	31	11.3	6.9	14.8	-	9.9	8.6	132	16
Lupine	10E1	7300	5/1	26	9.0	0.0	-	10.2	-	3.6	250	

MONTANA SNOW SURVEYS May 1, 1953

MISSOURI BASIN

Drainage Basin & Snow Course *	No.	Elev.	Date of Survey 1953	Snow Depth (In.) 1953	Water Content (Inches) May 1 1953	Past Records 1952	1951	1950	1949	Average Data May 1 Avg.	%Avg.	Years
LOWER YELLOWSTONE (Wind River - above Div.Dam)												
Brooks Lake #3	10F2	9200	4/26	64	28.6	29.1	34.2	34.2	25.5	25.3	113	18
Burroughs Creek	9F6	8800	4/27	40	17.0	10.4	25.3	17.7	11.2	16.2	105	5
Du Noir	9F2	8750	4/28	19	6.3	2.5	11.6	11.7	2.1	6.9	91	12
Geyser Creek	9F3	8500	4/27	17	5.8	2.3	10.3	7.8	00	5.1	114	5
Little Warm	9F4	9500	4/27	49	19.0	17.8	28.1	26.2	17.3	22.4	85	5
Sheridan	9F1	7500	4/26	14	5.8	00	6.0	5.0	00	1.9	305	13
T-Cross Ranch	9F5	8000	4/27	14	5.5	5.3	7.7	6.2	00	3.6	153	12
Dinwoodie	9F10	10000	4/25	44	14.9	14.5	18.6	17.2	10.6	15.2	98	5
Dry Creek	9F9	9500	4/25	30	9.4	5.9	11.5	10.6	3.9	8.0	104	5
Hobbs Park	9G2	10000	5/2	47	11.9	26.8	25.8	30.3	21.3	26.0	46	5
Mosquito Park	9G3	9500	5/2	30	7.7	12.9	8.1	12.7	5.4	7.0	110	8
St. Lawrence	9F11	9000	4/30	17	5.1	9.3	6.9	10.3	4.8	7.8	65	10
Trout Creek	9G1	8400	5/2	21	4.7	8.5	00	1.5	00	2.5	188	5
POPO AGIE RIVER												
Blue Ridge	8G2	9500	5/1	34	9.3	20.5	12.6	18.4	10.8	12.6	74	14
Grannier Meadows	8G4	9000	5/1	31	9.7	20.1	12.0	23.1	13.2	14.0	69	17
Sawmill Glade	8G1	8500	5/1	18	5.6	11.6	7.3	7.6	2.1	7.2	78	14
South Pass	8G3	9000	5/1	33	10.2	20.7	15.8	25.3	14.3	14.8	69	14

MONTANA SNOW SURVEYS May 1, 1953

MISSOURI BASIN

Drainage Basin & Snow Course *	No.	Elev.	Date of Survey 1953	Snow Depth (In.) 1953	Water Content (Inches) May 1 1953	Past Records 1952	1951	1950	1949	Average Data May 1 Avg.	%Avg.	Years
BIG HORN RIVER (Wyoming)												
Beavers Mill	9F8	8000	4/26	41	14.3	5.7	6.8	8.0	4.8	6.3	227	5
Owl Creek	8F1	8700	4/25	32	10.4	6.9	5.4	10.0	5.6	7.0	149	5
Ranger Creek	7E1	8800	5/1	28	7.3	5.2	6.2	8.4	6.7	6.4	114	17
Tensleep R.S.	7E3	8200	5/2	23	5.8	3.8	5.5	8.5	1.5	4.4	131	18
Wood River	9E7	8000	5/1	13	3.5	1.1	5.4	5.0	2.3	4.0	88	13
POWDER RIVER												
Sour Dough	6E1	8500	5/4	24	6.7	2.2	4.9	6.0	0.0	5.0	134	17
Muddy Pass	7E7	9700	5/4	30	10.0	7.1	7.4	9.5	-	8.0	125	4

MONTANA SNOW SURVEYS May 1, 1953

COLUMBIA BASIN

Drainage Basin & Snow Course	No.	Elev.	Date of Survey 1953	Snow Depth (In.) 1953	Water Content (Inches) May 1 1953	Past Records 1952	1951	1950	1949	Average Data May 1 Avg.	%Avg.	Years
FLATHEAD RIVER												
Blue Bird	14A1	6800	4/30	105	45.5	34.9	44.4	53.7	36.7	36.1	129	15
Basin Creek	13B14	5000	4/26	00	00	00	2.1	-	-	-	-	3
Big Creek	13B3	6750	4/30	107	45.9	42.1	48.0	60.0	-	43.1	106	5
Brush Creek	14A4	5000	4/30	27	10.3	2.3	8.6	17.1	-	5.8	179	10
Cattle Queen	13A1	4700										
Coyote Hill	13B11	4200	5/1	8	3.7	00	-	-	-	-	-	2
Desert Mountain	13A2	5600	5/2	36	13.3	7.9	14.8	21.7	10.8	10.1	131	17
Hell Roaring Div.	14A3	5700	5/1	69	30.2	25.3	24.0	37.4	26.7	26.7	114	12
Holbrook	14B13	4530	4/20	00	00	00	1.4	-	-	-	-	3
Logan Creek	14A5	4300	4/30	5	1.6	00	1.0	7.1	-	1.1	149	15
Marias Pass	13A5	5250	4/30	45	17.4	10.5	19.7	26.3	12.1	9.9	180	19
North Fork Jocko	13B7	6330	5/1	97	42.9	35.1	43.4	59.6	-	35.6	118	6
Quintonkon	13A13	3800	5/2	9	3.5	4.1	4.6	-	-	-	-	3
Rainy Lake	13B6	4300	5/1	Under water		00	00	10.2	T	-	-	7
Spotted Bear Mt.	13B2	7000	4/28	20	6.9	-	6.8	18.1	-	-	-	4
Strawberry Lake	13B10	6500	4/30	96	40.5	39.7	27.9	58.8	35.4	40.4	100	5
Trinkus Lake	13B1	6500	4/30	88	37.9	40.6	32.9	53.1	36.5	40.8	100	5
Trout Lake	13A12	3600	4/29	22	7.4	4.3	-	20.2	-	11.7	63	4
Twin Creeks	13B11	3580	4/29	00	00	00	00	-	-	-	-	3
Upper Holland Lake	13B5	7000	5/6	83	34.1	34.0	33.5	-	-	33.9	103	3
PEND ORIELLE												
Baree Mt.	13B1	6000	5/1	101	42.2	37.6	40.4	68.1	51.1	39.8	106	17

MONTANA SNOW SURVEYS May 1, 1953

COLUMBIA BASIN

Drainage Basin & Snow Course *	No.	Elev.	Date of Survey 1953	Snow Depth (In.) 1953	Water Content (Inches) May 1 1953	Past Records 1952	1951	1950	1949	Average Data May 1 Avg.	%Avg.	Years
UPPER CLARK FORK												
Coyote Hill	13B11	4200	5/1	8	3.7	00	-	-	-	-	-	2
Chessman Reservoir	12C5	6200	4/30	12	3.5	00	3.0	7.8	00	1.6	219	18
Lubrecht Forest	13C8	5400	5/1	No snow		00	1.0	-	-	-	-	3
North Fork Jocko	13B7	6330	5/1	97	42.9	35.1	43.4	59.6	-	35.6	118	6
Pipestone Pass	12D1	7200	5/1	24	6.1	0.3	6.3	3.2	1.0	2.0	306	14
Rainy Lake	13B6	4200	5/1	Under water		00	00	10.2	T	-	-	7
Stemple Pass	13C1	6900	4/30	31	8.8	4.2	11.2	14.2	6.3	5.9	149	19
Tenmile, Lower	12C2	6250	5/2	18	5.4	00	5.1	8.9	0.2	2.0	270	18
Tenmile, Middle	12C3	6800	5/2	35	11.8	1.7	11.2	16.3	3.5	6.3	187	19
Tenmile, Upper	12C4	8000	5/2	44	16.2	5.9	14.8	18.8	7.1	10.2	159	18
*Lookout	15B2	5250	5/1	70	29.8	25.9	27.5	45.1	21.4	22.6	131	17

MONTANA SNOW SURVEYS May 1, 1953

COLUMBIA BASIN

Drainage Basin & Snow Course *	No.	Elev.	Date of Survey 1953	Snow Depth (In.) 1953	Water Content (Inches) May 1 1953	Past Records 1952	1951	1950	1949	Average Data May 1 Avg.	% Avg.	Years
KOOTENAI												
Blue Bird	14A1	6800	4/30	105	45.5	34.9	44.4	53.7	36.7	36.1	127	15
Brush Creek	14A4	5000	4/30	27	10.3	2.3	8.6	17.1	-	5.8	179	10
Fernie	Canada	3500	4/30	15	3.8	00	2.1	7.7	00	2.3	160	7
New Fernie	Canada	4100	4/30	25	5.1	00	11.1	-	-	-	-	3
Marble Canyon	Canada	5000	4/30	35	14.7	7.3	19.1	16.7	10.2	13.1	112	6
Red Mt., Montana	15A1	6000	5/1	51	20.9	9.4	19.9	31.1	16.3	15.1	138	16
Sinclair Pass	Canada	4500	4/30	4	1.7	00	3.1	3.2	0.2	1.2	142	7
Sullivan Mine	Canada	5100	5/1	26	10.2	7.2	12.9	16.6	7.9	10.9	94	6
Gray Creek	Canada	5100	4/26	50	17.7	15.5	19.7	24.5	18.4	19.6	90	6
BITTERROOT												
Gibbons Pass	13D2	7100	5/1	67	28.7	21.8	23.6	28.3	22.9	19.8	145	18
Nezperce Camp	14D2	5580	4/28	35	12.0	4.0	4.9	13.1	6.0	4.4	273	17
Nezperce Pass	14D1	6575	5/1	46	16.1	12.2	13.3	18.6	12.9	9.7	166	17
*Kit Carson	14D3	4700	5/1	5	1.1	-	-	2.2	-	0.5	220	11

Federal - State - Private

COOPERATIVE SNOW SURVEYS

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Furnishes the basic data necessary for forecasting water supply for irrigation, domestic and municipal water supply, hydro-electric power generation, navigation, mining and industry

"WATER IS THE WEST'S GREATEST RESOURCE"